[illegible] the gosling is [illegible] the [illegible] in the egg, as [illegible] that may also be. If the smaller end of the egg pips, it should be [illegible]

If the geese are permitted to ~~set~~ after their eggs, and then it is believed they [illegible] after laying the last clutch this is a very desirable practice, there are practically no problems under normal circumstances. One of these is that she is in a position to get ~~herself~~ themselves soaking wet when ~~she~~ they ~~leaves~~ off the nest, which they will seem to do, to moisten the eggs when they returns. Almost all geese will cover the eggs with the nesting material prior to leaving the nest. This tends to keep them from chilling. Occasionally, however, a goose will neglect to uncover the eggs on returning to the nest. This results in the nesting material insulating the eggs from the warmth of the goose's body. Although the goose may resent the act, it is necessary to uncover the eggs, even at the risk of being bitten. Chinas, even should they want to, can't bite very hard in any event, and with those with which we have had experience, a token peck is more likely than a bite.

Some Chinas do not make good setters, and some are impatient setters. George Washington, having been given a setting of Chinas by Gouverneur Morris, was disgusted when a goose abandoned her nest just before hatching. He described her as "the foolishest fowl". Such Chinas should be watched more carefully than others. Not infrequently these eggs can be saved by putting the goose back on the nest and barricading her if she shows no disposition to stay on the eggs, by putting other geese on them, or by dividing them up among broody chickens, if available. We have saved eggs, which remained ~~and~~ uncovered all night. It is recommended that the nests be observed as early in the morning as possible. Also, some geese abandon unhatched eggs to care for the young that have hatched. This can sometimes be prevented by putting the goslings with other adult geese who will normally adopt the young immediately. We have also saved [illegible] eggs by adding [illegible] Chinas [illegible] than those upon which they are setting. From our experience, it [illegible] during the earlier part of the laying period.

[illegible] that the goose will lay [illegible]

RESEARCH COLLECTION

[illegible] [illegible] [illegible] at the time of [illegible] the [illegible] [illegible] [illegible]
[illegible] should be done only by [illegible], [illegible] by other means.

If chickens are used to incubate goose eggs, they should have an application of an insecticide to prevent the accumulation of such parasites as mites or lice. We have found a few drops of nicotine sulphate applied below the vent effective for the entire period, but if further treatment is called for the attendant will [illegible] [illegible]. Chickens should have the goose eggs turned and sprinkled for them, because this is beyond their physical capacity. Mites will spread on the attendant's hand and arm if present. Chickens should not be confined to such a small nest that they cannot allow the eggs to cool periodically, as they and geese will instinctively do. We keep water and food available to them at all times. The water with which the eggs are moistened should be as warm as the eggs. Most chickens can incubate four goose eggs, [illegible] one or two more, except for the very smallest breeds. The incubation period of goose eggs is much longer than that of chicken eggs, hence the setting hen should be watched carefully toward the end of the hatching period.

If an incubator is used, regardless of the type, it should be cleaned thoroughly and then fumigated as soon as the hatching is over.

The fluffy young gosling is an object of considerable attraction to humans, young and old alike. Careful handling will not hurt them and, if they are to be made into pets, helps toward that end. Children should be cautioned not to squeeze them. The best way to hold them is with their legs on each side of the middle finger of the hand, with the palm up. The hand thus makes a cradle for the gosling and the only restraining pressure that need be applied is lateral, to the legs, which are not hurt by this slight pressure. If with the parents or foster-parents, handling the goslings may not be easy or may involve slight dangers, for geese, especially the males, make wonderful [illegible] and [illegible] parents. The Chinese, especially, fight to the point of not only refusing to eat proffered food offered their [illegible], [illegible] [illegible] the young to protect them from real or fancied dangers. I have [illegible] [illegible] [illegible] [illegible] [illegible], Daddy almost using his neck as [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible]

as object they see is the parent. Dr. Konrad Z. Lorenz, now in charge of this line of inquiry at the Max Planck Institute in Berlin, Germany, has discussed this phenomenon at some length in both scientific and popular writing. He is regarded as the father of this technique. Since the imprinting is accomplished by a human, since it is a simple matter for an attendant or a child to persuade the goslings that he or she is the mother, with sometimes interesting, sometimes embarrassing, results. Goslings can also be foolishly brave when quite young. If in the presence of other domestic animals, they can be so persistent in their annoyance of cats and dogs, both in nipping them and stealing food, that they almost goad the animals into retaliation.

There is really no defense goslings can put up against any animals that any creature [illegible] the capability of killing them. With grown geese it is a different matter. They are, unless too tame, excellent watch [illegible] among [illegible], [illegible] and [illegible] are usually bothered by only large or hungry predators. The gander can be [illegible] very bravely in the presence of danger to his family. Perhaps the greatest danger in most localities comes from humans - thieves.

The end product of goose-raising is the same as that of any other kind of agriculture - a crop. Geese [illegible] additional benefits, but the crop is what should be kept in mind. The major crop is an excellent source of tasty protein for humans. Young goose is a very fine dish. For the most part it is just [illegible] until done. Old geese can be remarkably tough, and if one is injured or should be slaughtered for any other reason, perhaps the best preparation would begin with a period of marination to tenderize the [illegible]. The [illegible] can be fed to other animals. And the [illegible] can dry.

13 Picking a goose is not an easy chore at best and at worst it is exceedingly tedious. The use of scalding water helps, but means wet feathers. There is a market in parts of the United States for the flight feathers, which ~~ase~~ are used by zither players and for the making of quill pens, etc. The down has been prized for centuries, and the development of synthetics has not eliminated the market. It is scarce because of high labor costs in the United States. Traditionally, adult geese have been partially plucked several times a year because the down grows back. Under some circumstances, he believes, the down and feathers might provide additional sources of income for the farmer. (add from project file) (see attachment for insert)

It is difficult to predict the productive life of geese in an environment both strange and foreign to the predictor. In those parts of the United States and Europe in ~~most~~ [illegible] which geese have been raised for many years it is believed that they are not the best breeders until several years old - until most other fowl would be considered well past their prime and economically a loss. Geese will live to unbelievable ages, frequently over a hundred years old. Ten to fifteen years, with decent care, should not be too long to expect them to more than pay their keep, and where the cost of keeping them is slight, even longer might well be profitable. With unusually good stock, it might even pay to keep them when they lay few eggs. Theoretically, as the gander ages he ~~may~~ should be burdened with fewer mates. It should be kept in mind that breeding may be like hard work for him. Also, as he ages, he tends to become less active.

Among the other problems that may confront people unfamiliar with geese is sexing them. This can also bewilder experienced people. Chinas may more readily be sexed by sight than other species once they are well grown. The ganders are usually larger, having longer necks and bigger knobs. Their behavior (sometimes at a very early age) is also different. They act protectively toward the others or aggressively to strangers. They frequently put their chins almost on the ground when advancing ~~at~~ toward another goose or anything else they fancy a threat or competitor

Add where indicated on page 6

Prior to slaughter (if at all possible) geese should be kept off of pasture for several days or more because they will sometime eat things that will taint the meat. In the Washington area one of the worst offenders, to both nose and taste, is wild garlic.

Add where indicated on page _____

Plucking is easier if the flight feathers are pulled as soon as the goose is killed, both because they are harder to pull and they prevent penetration of the water if the goose is scalded. Perhaps the best way to slaughter the goose is to hang it at a convenient height by both legs, cut the jugular with a sharp, pointed knife and immediately ~~plunge~~ push the point of the knife into the brain, through the cleft in the upper part of the mouth. This tends to relax the nerves and muscles holding the feathers. If a weighted can is hung from the lower mandible, plucking can begin as soon as the goose begins to bleed. The can will keep the goose from flapping wildly and will catch the blood.

[illegible]

other habits and mannerisms, which vary from gander to gander, will soon be noticed by an observant attendant.

If necessary to sex them earlier, this can be done beginning as soon as they hatch by carefully forcing them to evert the penis, in the case of the male, or demonstrating the absence of one in the case of the female. With very young [illegible] [illegible] observation must be acute because the female also has an appendage in the cloaca but this is much smaller. Eversion is accomplished by holding the goose on its back, against the body of the examiner or an assistant, meanwhile pressing on the sides and somewhat toward the front of the vent. With well grown geese, there is no mistaking the male organ.

When it is desired to expand the number of breeding geese available, all the good-looking females can be kept, but only those ganders which, by appearance or carriage, may be considered best. While only one China gander is ~~[illegible]~~ enough for as many as five geese, it is a wise precaution to have a few extra ganders available in the case to allow for various contingencies, for the loss of a gander at the beginning of the breeding period, or at any other time, ~~[illegible]~~ means all the eggs will be infertile. It is less of a problem to introduce a China gander to a new and strange flock of females than it is with other species, but it may [illegible] [illegible] by a problem, as indicated above. Required replacements should be made as promptly as possible.

With well seasoned and good Chinese, there is a good possibility some of the earliest-hatched females will lay in the fall or early winter of their first year. If not under observation the eggs may be deposited in odd places that may elude [illegible] the goose an [illegible] [illegible] a [illegible] [illegible]. [illegible] [illegible] what is happening if [illegible] [illegible].

REFERENCE BULLETIN

If the gander in the flock is [illegible] [illegible] [illegible] female, there is a fair presumption the eggs are fertile. Because of the relatively small number of eggs laid by geese as compared with chickens and most ducks, in the absence of compelling reasons to the contrary it should be assumed that the eggs ~~is~~ are fertile and it should if at all possible be hatched, if necessary by the goose. Our experience with these, which are called "out of season" eggs, has been that they hatch as well as others, with the Chinese.

It is only a presumption, but we believe if necessary geese might well be forced into production and their production prolonged in the same manner as chickens have been for years and, more recently turkeys, by controlled artificial lighting. They tend to come into production with increasing light, as do all fowl. If this is attempted, it would seem that they would have to be confined and well fed, with the amount of light increasing gradually and slowly. If feed is not too expensive, the number of available eggs might thus be increased. We also believe green feed both desirable and necessary in these circumstances. If it is not feasible for the geese to graze, then the grass should be cut and brought to them. They also relish cuttings of young grains such as wheat.

To anyone unused to keeping poultry the foregoing may sound as though raising geese is a difficult and elaborate business. Nothing can be farther from the truth. They actually require less care than almost any other living things.

Nor should the foregoing be accepted as a complete discussion of all the problems and all the answers. It is rather a brief discussion of some, with the solutions of which ~~they~~ we are aware. Raising the geese is simple, easy, and we hope it will be enjoyable and profitable, as it should be.